



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,166	06/26/2001	Stephen A. Roth	18360/214077	2378
7590	06/01/2005		EXAMINER	
Devon A. Rolf c/o Garmin International, Inc. 1200 East 151st Street Olathe, KS 66062			DAVIS, CYNTHIA L	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/892,166

Applicant(s)

ROTH ET AL.

Examiner

Cynthia L Davis

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 3/24/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "receiving a self-generated broadcast signal" is unclear. If the signal is self-generated, it is not apparent from where it would be received. Also, self-generated does not make clear where the signal is being generated.

### ***Response to Arguments***

Applicant's arguments, filed 3/24/2005, with respect to the rejection(s) of claim(s) 1, 3, 9, and 11 under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of 35 USC 103(a).

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1-4, 6, 11, 14-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu (5896422) in view of Lomp.

Regarding claim 1, a method for adjusting a received bit detection threshold in a digital communication system is disclosed in Lu. Receiving a self-generated broadcast

Art Unit: 2665

signal is disclosed in column 11, lines 60-65 (the circuit generates an output signal, which is received by the A/D converter). Determining a median value of the self-generated broadcast signal and adjusting the bit detection threshold based on the median value is missing from Lu. However, Lu does disclose in column 11, lines 35-42, taking the average of a signal in order to accordingly adjust the bit detection threshold (Lu, column 13, lines 48-51). Further, Lomp discloses in column 3, lines 47-52, either tracking the median or the average of a signal to determine errors. It would have been obvious to one skilled in the art at the time of the invention to use the median tracking method disclosed in Lomp in the averaging system of Lu. The motivation would be to keep the received energy equal on both sides of the median (see Lomp, column 7, lines 20-23).

Regarding claim 2, digitizing the received self-generated broadcast signal prior to determining the median value of the self-generated broadcast signal is disclosed in column 11, line 66-column 12, line 1 and column 12, lines 11-13 (the signal goes through the A/D converter before it goes to the averager circuit).

Regarding claim 3, receiving a self-generated broadcast signal further comprises receiving an ownship broadcast signal and wherein the step of determining a median value of the self-generated broadcast signal further comprises determining a median value of the ownship broadcast signal is disclosed in Lu, column 11, lines 60-65 (the signal is self-generated, which is the definition of ownship signal given in the instant specification on page 3, line 6).

Regarding claim 4, detecting a positive peak frequency value and a negative frequency peak value for the self-generated broadcast signal and determining a peak-to-peak deviation of the self-generated broadcast signal is missing from Lu. However, Lomp discloses in column 3, lines 47-52, either tracking the median or the average of a signal to determine errors, and in order to determine a median, the maxima, or peaks, must be detected (Lomp, column 6, lines 60-64). It would have been obvious to one skilled in the art at the time of the invention to use the median tracking method disclosed in Lomp in the averaging system of Lu. The motivation would be to keep the received energy equal on both sides of the median (see Lomp, column 7, lines 20-23).

Regarding claim 6, detecting a positive peak value and a negative frequency peak value for a self-generated broadcast signal further comprises detecting a positive peak value and a negative frequency peak value substantially concurrent with the self-generated broadcast signal being transmitted is disclosed in Lu, column 11, lines 35-42.

Regarding claim 11, an analog-to-digital (A/D) converter that digitizes an analog baseband input signal by sampling the signal at a predefined data rate is disclosed in Lu, figure 6, element 104. A positive peak detector in electrical communication with the A/D converter that receives the signal from the A/D converter and determines a positive peak value, a negative frequency peak detector in electrical communication with the A/D converter that receives the signal from the A/D converter and determines a negative frequency peak value, and a calculation task unit in data communication with the negative and positive peak detectors that calculates a peak-to-peak deviation to formulate a bit detection threshold value is missing from Lu. However, Lomp discloses

Art Unit: 2665

in column 3, lines 47-52, either tracking the median or the average of a signal to determine errors, and in order to determine a median, the maxima, or peaks, must be detected (Lomp, column 6, lines 60-64). It would have been obvious to one skilled in the art at the time of the invention to use the median tracking method disclosed in Lomp in the averaging system of Lu. The motivation would be to keep the received energy equal on both sides of the median (see Lomp, column 7, lines 20-23). A bit detector in data communication with the calculation task unit and in electrical communication with the A/D converter that receives the digitized signal from the A/D converter and the bit detection threshold value from the calculation task unit for the purpose of converting the digitized signal to a digitized bit stream of data is disclosed in Lu, column 11, line 51 (the digitized signal is processed as a data bit stream).

Regarding claim 14, determining a median value of the self-generated broadcast signal comprising determining a median value between positive and negative peaks of the self-generated broadcast signal is missing from Lu. However, Lomp discloses in column 3, lines 47-52, either tracking the median or the average of a signal to determine errors, and in order to determine a median, the maxima, or peaks, must be detected (Lomp, column 6, lines 60-64). It would have been obvious to one skilled in the art at the time of the invention to use the median tracking method disclosed in Lomp in the averaging system of Lu. The motivation would be to keep the received energy equal on both sides of the median (see Lomp, column 7, lines 20-23).

Regarding claims 15 and 17, the median value being a true median value rather than a weighted average is missing from Lu. However, Lu does disclose in column 11,

Art Unit: 2665

lines 35-42, taking the average of a signal in order to accordingly adjust the bit detection threshold (Lu, column 13, lines 48-51). Further, Lomp discloses in column 3, lines 47-52, either tracking the median or the average of a signal to determine errors. It would have been obvious to one skilled in the art at the time of the invention to use the median tracking method disclosed in Lomp in the averaging system of Lu. The motivation would be to keep the received energy equal on both sides of the median (see Lomp, column 7, lines 20-23).

2. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Schrader and Lomp.

Regarding claim 9, receiving a broadcast signal is disclosed in Lu, column 11, lines 60-65. The signal being an ownship signal is missing from Lu. However, an ownship signal is disclosed in Schrader, column 6, lines 15-16. It would have been obvious to one skilled in the art at the time of the invention to receive an ownship signal in the system of Lu. The motivation would be to receive an old, known type of signal. Digitizing the analog ownship broadcast signal at a predefined data rate is disclosed in column 11, line 66-column 12, line 1 and column 12, lines 11-13 (the signal goes through the A/D converter before it goes to the averager circuit). Detecting a positive peak value and a negative frequency peak value from the digitized ownship signal and calculating a peak-to-peak deviation for the digitized ownship signal based on the positive and negative frequency peak values is missing from Lu. However, Lomp discloses in column 3, lines 47-52, either tracking the median or the average of a signal to determine errors, and in order to determine a median, the maxima, or peaks, must be

detected (Lomp, column 6, lines 60-64). It would have been obvious to one skilled in the art at the time of the invention to use the median tracking method disclosed in Lomp in the averaging system of Lu. The motivation would be to keep the received energy equal on both sides of the median (see Lomp, column 7, lines 20-23). Adjusting the bit detection threshold based on the peak-to-peak deviation is disclosed in Lu, column 13, lines 48-51.

Regarding claim 16, the median value being a true median value rather than a weighted average is missing from Lu. However, Lu does disclose in column 11, lines 35-42, taking the average of a signal in order to accordingly adjust the bit detection threshold (Lu, column 13, lines 48-51). Further, Lomp discloses in column 3, lines 47-52, either tracking the median or the average of a signal to determine errors. It would have been obvious to one skilled in the art at the time of the invention to use the median tracking method disclosed in Lomp in the averaging system of Lu. The motivation would be to keep the received energy equal on both sides of the median (see Lomp, column 7, lines 20-23).

3. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Lomp in further view of Holloway.

Regarding claim 5, filtering the peak-to-peak deviation to substantially reduce short-term jitter and define the bit detection threshold value is missing from Lu. However, Holloway discloses in column 9, lines 64-65, using a filter to reduce short-term jitter. Reducing jitter has the effect of fine-tuning the definition of the bit threshold value. It would have been obvious to one skilled in the art at the time of the invention to

use a filter in the circuit. The motivation would be to reduce the short-term jitter of the threshold value.

Regarding claim 13, a filter in data communication with the calculation task unit that filters the peak-to-peak deviation value to reduce short-term jitter is missing from Lu. However, Holloway discloses in column 9, lines 64-65, using a filter to reduce short-term jitter. It would have been obvious to one skilled in the art at the time of the invention to use a filter in the circuit. The motivation would be to reduce the short-term jitter of the threshold value.

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Ueunten.

Regarding claim 7, the step of receiving a self-generated broadcast signal further comprises receiving a self-generated broadcast signal through an intermediate level frequency feedback path is missing from Lu. However, Ueunten discloses in column 5, lines 21-23 using a frequency feedback path to help maintain a desired output voltage in the face of externally applied signals. It would have been obvious to one skilled in the art to use a frequency feedback path. The motivation would be to reduce the effects of external noise on the signal.

Regarding claim 8, the step of receiving a self-generated broadcast signal further comprises receiving a self-generated broadcast signal through a transmit signal level frequency feedback path is missing from Lu. However, Ueunten discloses in column 5, lines 21-23 using a frequency feedback path to help maintain a desired output voltage in the face of externally applied signals. It would have been obvious to one skilled in the

art to use a frequency feedback path. The motivation would be to reduce the effects of external noise on the signal.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Schrader and Lomp in further view of Holloway.

Regarding claim 10, filtering the calculated peak-to-peak deviation to reduce short-term jitter is missing from Lu. However, Holloway discloses in column 9, lines 64-65, using a filter to reduce short-term jitter. It would have been obvious to one skilled in the art at the time of the invention to use a filter in the circuit. The motivation would be to reduce the short-term jitter of the threshold value.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of McGibney.

Regarding claim 12, the positive peak detector and the negative frequency peak detector being activated to detect frequency peaks when the TDMA communication device begins sending a signal and deactivated when the TDMA communication device completes sending the signal is missing from Lu. However, McGibney discloses in column 10, lines 14-24, a peak detector in a TDMA system that is enabled during the TDMA frame, and then disabled. It would have been obvious to one skilled in the art to enable the peak detectors only when the system is transmitting. The motivation would be to only have the peak detectors on when they are needed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

Art Unit: 2665

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLD  
5/25/2005

CLD  
5/25/05



HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600